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Common Plants.

EVERY nurseryman's catalogue gives an important place to its list of rare plants, and, of course, the prices of trees and shrubs and herbs which are scarce are higher than those which afford an ample stock to draw upon. This is simply in obedience to the law of supply and demand, which in a general way regulates the prices of every commodity which man desires for use or ornament. In the eye of some persons, however, rare plants are invested with a value which does not belong to them intrinsically. One who has acquired the habit or passion for collecting, places the highest value on objects which are unique. A first edition or the only known copy of a book which in itself is nearly worthless may be a prize for which a book collector will give a small fortune; and in the same way an Orchid which is the only individual of its species known will command a price quite out of proportion to any charm it may have of form or color or fragrance. The case of one who is studying a given genus of plants is somewhat similar. He may want an Iris, for example, to complete his series, and to him the missing plant has an importance that would not belong to it under any other conditions.

All this is readily comprehensible, but there are other people who have a feeling somehow that rarity is in itself an element of beauty in a plant; at all events, if they would not state this broadly, they firmly believe in its converse, namely, that a plant which is common is not desirable. It is this idea which lies at the root of the distinction between "common trees" and "ornamental trees" which we so often hear. This notion was once so prevalent that it was a difficult thing a few years ago to find common American forest trees and shrubs for sale in American nurseries. When Central Park was planted it was easy enough to buy European Birches, Norway Maples and Horse-chestnuts, but few nurseries had our own Canoe Birch or Pin Oak or Pepperidge. English Hawthorns could be had by the hundred, but many of our native Thorns were not propagated at all. Spiræas and Kerrias and Honeysuckles from abroad could be had by the thousand, but our native Honeysuckles and many of the best of the Viburnums and other American shrubs were not classed as ornamental plants at all. Conditions have changed since then somewhat, and the herbaceous plants and shrubs and trees which grow in our own forests and along our waysides have been more freely admitted into the aristocratic society of their foreign relatives, and the fact that a plant is common is not always a reproach to it.

Different plants have different values to planters according to the use that is made of them. Landscape-gardening wherever it is practiced over areas of considerable extent deals properly with scenery; that is, with the permanent features of the land—its roll of surface, its sky-line and distance. The greatest artist in landscape is one who with these fundamental elements and the common trees and shrubs and grass makes a picture which is a unit, and every portion of which helps consistently to give expression to a central idea. This differs entirely from what is called decorative gardening, which is concerned more especially with the detailed ornamentation of more limited spaces. For decorative purposes plants and flowers may be grouped into arrangements which kindle admiration on account of their symmetry of form and richness of color. This is the presentation of beauty for its own sake. It appeals to the æsthetic sense alone and not to the imagination, and through it to our higher nature as a landscape picture does. It is not necessary that a decorative group should be in any sense natural, and plants with foliage of strong color or those that can be trained into peculiar shapes or which have an unusual habit are often the most valuable in such places. They are useful just as stones of different form and color are useful in a mosaic. In decorative gardening a plant of Golden Elder or of Prunus pissardi may have the highest value, while the same plants in a natural landscape would be worse than useless, and, indeed, might ruin a quiet picture by their obtrusiveness.

There is another kind of gardening, however, which has been called specimen gardening, and which has many attractions to genuine lovers of plants. To such persons a garden exists for its plants rather than the plants for the garden. It is not a landscape picture that is desired, nor yet geometrical designs of pleasing form and color. It is individual plants that are cherished irrespective of their arrangement, and they may be selected for their rarity or their oddity, or for any other quality that appeals to the fancy of the planter. This makes a pleasant diversion, but it is by no means the highest form of gardening. A wise observer once said that it marked a distinct decline in garden art when a gentleman led you to a point on his estate where he could show you the finest Cryptomeria in England, instead of conducting you to the point where you might see the most delightful view.

But we have wandered from our purpose. We set out to make a mild protest against the idea that a plant is not desirable if it is common. A great patron of horticulture once declared that he could get up no enthusiasm for Lilacs because they could be seen at every farm-house door. Now, since there are hundreds of varieties of the common Lilac and many distinct species besides, there is opportunity for gathering a collection of these shrubs, which represent a wide diversity of habit as well as in the form and color of their flowers—many of them rare plants which never graced a farmer's yard. But the common Lilac itself will always be a desirable shrub. It has such intrinsic merit that it cannot be vulgarized by mere abundance. Its habit of growth, the graceful way in which its dense panicles of flowers are carried above the thick leaves, their exquisite color, which has no exact duplicate in the vegetable kingdom; the fragrance, which is their own and unmistakable, will always make this a useful plant. It is hardy, long-lived, and will endure abuse; it is often found by a wayside cabin without a single companion, and yet it is beautiful enough to have been the chief ornament of the home of one of our great poets. It is admired because of its many good qualities, and it will be more and more valued for association by every succeeding generation of plant lovers.

The fact is, that for all practical purposes the cheapest plants are the best. Among the novel introductions every year there are some that will stand the test of time, and as soon as they demonstrate their usefulness they will be common. In order to be widely useful a plant must be easily propagated, it must be hardy and long-lived, and these are qualities that will ultimately make it cheap, just as the Tartarian Honeysuckle is cheap, although one of the most beautiful and indispensable of shrubs. Grass is common, but it is an unfailing refreshment to the eye, and it is so universally appreciated that no one considers Ruskin's glowing description pitched on too high a key. No novice need be deterred from planting trees or shrubs on account of the high price of novelties or rarities. If his purse will allow him to import the most expensive sorts he may find pleasure in gratifying his desires in this direction, but if he buys no others he will discover at last that he has but a sickly lot of incongruities. He will learn that the common plants are the basis of every good collection, and that cheap plants are the most effective in producing pictures which are impressive and permanent.

The True Purpose of a Large Public Park.*

THE true purpose of a large public park is to provide for the dwellers in cities convenient opportunity to enjoy beautiful natural scenery and to obtain occasional relief from the nervous strain due to the excessive artificiality of city life.

By large public park is not meant one covering more than a certain number of acres, but one large enough to contain a complete natural landscape, where the boundaries will not be obtrusive; where city conditions will not be unduly apparent; where one may stroll over hill and dale, across meadows and through woods, always amid natural surroundings, for hours, without twice following the same routes; where one may come again and again without becoming familiar with all its interesting localities and natural features; where many thousands of visitors may be enjoying the scenery at the same time without crowding each other; where those who especially seek seclusion may find parts so remote from the boundaries that even if city houses are not completely hidden they become reduced in the distant perspective to inconspicuous proportions as compared with the foliage of trees and other natural objects in the foreground; so remote that the roar of street traffic is less noticeable than the rustle of foliage stirred by the breeze or than the songs of birds and insects.

That the scenery of such a park should be beautiful no one will deny, but that it should be natural needs explanation. There can hardly be such a thing as absolutely natural scenery in a public park near a large city. Fires, pasturing, cultivation, wood-chopping, the destruction or driving away of the wild animals, wild birds and insects, and the introduction of others, have long since ended purely natural conditions about every large city, leaving at best only a general resemblance to natural scenery. Even if a tract of land is still to be found in a comparatively natural condition while in private ownership, it could not remain entirely in that condition after being properly fitted for and used as a public park.

With these limitations in mind, what is meant by the natural scenery of a large public park may be itemized as ordinarily either open meadow, open grassy hillsides or rolling ground, open groves of trees with good turf, dense woods, borders of shrubbery, or low woody or herbaceous undergrowth, water in river, brook, pond or pool, and more rarely cliffs or ledges of rock. These principal features of the scenery again may be divided into their elements of earth or rock surface, water surface and foliage, either ground cover, shrubbery or trees.

In most cases a good deal of grading needs to be done in places. The original natural surface is wholly or partially destroyed and a new surface is created artificially, but it should be so shaped and finished as to appear natural, or, at least, as closely in harmony with natural surfaces as study and care can make it. Too often, however, through lack of appreciation of the true purpose of a large public park, the grading which must be done, either ignorantly or carelessly, or owing to mistaken ideas as to economy, or owing to personal preference for artificiality, is made as regular and unnatural as possible, so that what might have been done in harmony with the natural scenery antagonizes it and greatly lessens its value for its true purpose. Abundant instances of artificial-looking grading in the wrong place exist in many of our large public parks. The responsibility of park commissioners for this sort of interference with the true purpose of a large public park is generally only in the indirect way of entrusting the work to men not properly trained in park work or by enforcing an unwise economy; for it must be acknowledged that to grade naturally and gracefully usually costs more than to grade formally and stiffly.

The water surfaces of a park need more study and care to make them appear natural in outline and as to their margins than does the general ground surface of the park. Too often park waters are almost as stiff and formal in their outlines and in the shaping of their shores as are the curvilinear distributing reservoirs of waterworks. Here, again, the park commissioners are indirectly responsible for the bad results in consequence of working without the plans and directions of a trained artist or without a foreman trained in producing natural effects in park grading.

The verdure of a large public park is what the eye rests upon almost everywhere, and it is therefore the most important of the natural elements of the scenery. The almost universal ground cover is grass, since no other plant is so well adapted to the purpose of hiding bare earth while enduring, with due care and under sufficient restrictions, the trampling of great numbers of people. But there are places where even grass will not thrive, or where a wilder or more varied effect is desirable. Such cases are very generally ignored in our large public parks owing to a lack of knowledge or of artistic appreciation of the possibilities or requirements of particular cases. If gardeners studied natural scenery more they would almost surely discover many opportunities in parks for the application of what they observed in the country. For instance, a dense natural wood which need not be or cannot be well thinned out sufficiently to permit a good turf to be grown, so that people may properly be allowed to ramble everywhere in it, may often be rendered far more natural and interesting by planting pretty wild flowers in its margins and suitable shrubby undergrowth in its interior. Again, steep, open banks, where it is difficult and expensive, and often unnatural, to maintain turf, can be made far more interesting by the use of low ground-covering plants or shrubbery.

Relief from the nervous strain of an artificial city life is afforded in no way so agreeably and conveniently as by a ramble amid the natural scenery of a large park and by the leisurely contemplation of the landscape. There are many workers in a city who suffer more or less from nervous strain, though often they are not fully aware of it. Where a large public park with ample provisions of natural scenery has been created, it has never failed to be much frequented for this purpose and to afford untold benefit to those who use it. Not only are the quiet and seclusion obtainable in the middle of a large area necessary in affording opportunities for occasional relief from the nervous stress of our artificial city life, but they are necessary to the enjoyment of the landscape of the park. Therefore, not only should conspicuous artificial objects unnecessary for the convenient use of the park be excluded from its natural parts, but noisy and dangerous occupations and amusements should also be kept out of, at least, the middle portions of a large park. In order to have the essential quality of seclusion, a large park should not be attempted on both

* From a paper read before the recent meeting of the Park and Outdoor Art Association of Louisville, Kentucky, by John C. Olmsted, of Brookline, Massachusetts.

sides of a railroad or important city street if it is possible to avoid it, for even if the landscape could be made to seem continuous across the gap the noise would almost destroy the desired seclusion of a considerable part of it. An extent of natural scenery sufficient to afford the sense of quiet and seclusion so beneficial to the city worker can only be secured where the grounds are ample, and therefore this should be the essential characteristic of a large park. It is the one vital reason for the existence of such a park. No number of small parks can possibly answer the same purpose, however useful and even necessary they may be for other reasons.

Even if the true purpose of a large park has been kept in view during the process of selecting the land, determining upon its landscape features, designing its necessary construction and plantations, it is too often lost sight of subsequently, and there is a marked tendency to artificialize the landscape. But whenever it is thought wise for a municipality to provide special attractions, these should be limited in kind and number and be carefully devised. It would not be wise or economical for a city to destroy or injure broad and beautiful park scenery by introducing artificial attractions into it when these could perfectly well be provided in the smaller squares or in special amusement grounds, which could usually be much nearer the centre of population than a large park, and therefore could be used by more people more frequently and more cheaply. It is customary for cities to provide for certain kinds of amusements which are healthful and innocent, and for certain objects that are instructive and entertaining and for some that are artistic and inspiring, and which cannot be or are not usually supplied solely by private effort. Such, for instance, are formal gardens, statuary, conservatories, botanical and zoölogical gardens, concert groves, electric and other fountains, fireworks and the like; also popular athletic grounds, parade grounds, ball grounds for boys, and facilities for boating and bathing. From motives of expediency it is customary to include arrangements for some of these purposes in large public parks, but they should be placed in their borders, and in such a way that they will do the least possible injury to the more secluded parts of the scenery. Great discrimination is necessary in selecting among these objects those which will least interfere with the primary purpose of a large public park. Those forms of amusement or instructive entertainment requiring large buildings or implying much noise, or which draw large and careless crowds that would be liable to injure the grass and shrubbery and trees of the park, should be excluded. It is good policy to secure suitable lands adjoining a large park which can be held in reserve as sites for public museums, grounds for parades, fireworks, public speaking, baseball and (by flooding in winter) for skating and so on. The park in Brooklyn is exceedingly fortunate in having two very commodious public grounds adjoining it. It is greatly to be desired that other cities should do likewise.

If there were a well-established and clearly recognized custom controlling what artificial features might and what should not be introduced into large public parks, such customs would develop into rules of common law. Or if there had been carefully drawn and detailed statutes passed upon the subject, or if there had been a series of decisions of courts as to what buildings and other objects could legally be introduced into public parks, their true purpose would be more clearly understood. It is true, there has been for years a statute in New York state forbidding the erection of buildings above a certain size not strictly for park purposes in any public park, but the principle upon which this law is based is so little understood that a few generous individuals recently had no difficulty in getting a special law passed which enables them, with the consent of the Park Commissioners, to introduce a great museum of history into one of the most beautiful landscapes of one of the most perfect large public parks in the world. The usual arguments in support of this desecration have been urged, namely, that the building is for a worthy semi-public object; that the collection it is to contain will be interesting and instructive to the public, and that the building itself will be handsome, and consequently that it will be an ornament to the park. If this argument is sound for one such building it is equally sound for others. In that case a large public park is little more than a tract of beautiful vacant building lots which the public is temporarily enjoying as a playground until it shall be gradually required for one public or semi-public building after another. If there is no principle upon which the advocates of the first semi-public building can be refused a site, there is no logical reason for refusing sites to any subsequent projects of a like sort. The bars once let down, there will be a stampede to secure beautiful building sites free of cost for natural history, art, botanical and other museums; for armories, normal colleges, high, grammar and primary schools, and so on almost indefinitely.

Proposed Enlargement of the Missouri Botanical Garden.

THE project for enlarging the Missouri Botanic Garden is about to be realized, and Professor Trelease has kindly described the main features of the plans now in the hands of the Messrs. Olmsted. In providing for the future of the garden the Director says the three principal objects to be kept in view are "beauty, instructiveness and adaptability to research." He further says of the grounds and plant-houses, "extensions and changes should be conducted on lines decided upon definitely in advance and be adhered to as closely in detail as the ever-changing conditions may permit, so that each step taken shall be part of a definite, carefully considered general plan, the aim being to develop experimentally along all lines, so that inevitable mistakes can be easily detected and promptly rectified." It will be the aim to make the beauty of the grounds a distinct factor in the collection without sacrificing any of its value as an institution of scientific research.

A tract of between eighty and eighty-five acres of farm land, belonging to the Shaw estate, that adjoins the present grounds on the south-west, will form the addition. After reserving space for the necessary farm-buildings, nurseries and compost grounds, the tract is to be divided into three parts. About one acre will be set apart for developing such transient synopses as are found necessary or desirable. Twenty acres will be used for a synopsis of the North American flora, and sixty acres for a general synopsis of the flora of the world.

On the first division certain small synoptical collections will have place as they are required, no one of them being maintained longer than a few years. These collections may represent medicinal, fibre, forage and other economic plants, or they will illustrate certain botanical works or explain various interrelations between plants and animals, such, for instance, as the pollination of flowers; or they may illustrate the dissemination of seeds or the sleep of plants; or they may show how plants climb, how they catch insects and the like.

The second division lies south of the arboretum. Here it is intended to establish and maintain a synopsis of the flora of the United States, arranged as an attractive piece of landscape-gardening. Every order found in the United States, except parasites, will be represented in this section. It will, of course, be impractical to use all the species, but typical genera of each family can be represented by a few hardy, characteristic species, including the most effective, most interesting and most easily cared for. In this synopsis the so-called natural system of classification, as used in Gray's *Manual*, will be followed in the grouping or sequence of the orders. And the main walk will be the thread connecting the groups, some lying along it, others farther back, but all systematically arranged in relation to it, and easily found when the method is understood.

The third division, comprising the not less than sixty remaining acres of the present pasture, will be devoted to the general synopsis of the flora of the world, where it is intended to show every family that can be cultivated in the open air in this climate, omitting all that are included in the North American synopsis except those that are represented only in the United States. Only a few hardy, decorative and easily cared for species of each family will be used. In this synopsis the classification will be according to what Professor Trelease speaks of as the German system, the nearest approach to which is seen in *Pflanzenfamilien* of Engler and Prantl, and it will be the first planting exposition of a system which brings together not only those plants having evident relationship, but those having a common ancestor.

Under this dual system an object-lesson will be given in two types of classification; the vegetation of the United States will be set forth so that every visitor can become familiar with our native flora with the minimum of exertion and time. Besides this, the pleasing landscape effect produced by the artistic grouping of hardy native species on the twenty acres devoted to native plants will teach a third lesson which ought not to be lost upon the visitors to these popular grounds.

As soon as working plans are adopted the twenty-acre tract will be underdrained and graded, and it is hoped that this part of the work can be completed during the present season, so that the trees and the shrubs can be planted next spring, and the herbaceous material the year following. If the walks are completed the fourth year and the lawns the fifth year, by that time some five thousand species will have been established. Just when work on the ground for the general synopsis of the flora of the world will begin it is impossible to say, but it is intended during the present year to increase the greenhouse space and erect a Palm-tower twenty-eight feet square, in which benches will be abandoned, and everything will be planted out. The management expects to build within ten years a large Palm-house and conservatory, to be placed in the arboretum back of the present parterre, which will be enlarged, and opposite the main entrance to the garden.

Brighton, Ill. *Fanny Copley Seavey.*

Foreign Correspondence.

London Letter.

Celmisia Munroi.—This is one of the handsomest of the many species of Celmisia which are natives of Australia and New Zealand, where they are known as "Kid-glove" plants on account of the white felt which clothes the leaves of most of them. Beautiful as they are known to be, however, they have hitherto baffled the collectors who have tried to introduce them into European gardens, plants perishing on the voyage and seeds losing their vitality before they arrive here. Only three species have been introduced, namely, C. Lindsayi, figured in *The Botanical Magazine*, t. 7134; C. spectabilis, *The Botanical Magazine*, t. 6653, and the species under notice. This was introduced by Messrs. J. Veitch & Sons a few years ago, who have or had a large stock of it. A figure of it was published in *The Botanical Magazine* last year, t. 7496. It is now in flower in a cold greenhouse at Kew, the flowers being three inches across, Daisy-like, with white ray-florets and a small yellow disk. The leaves are lanceolate, nine inches long, covered with silky hairs. It is planted in sandy peat and is kept in a sunny position. The leaves are almost as silvery as those of the Cape Silver Tree.

Olearia insignis.—The Australian and New Zealand genus Olearia, which is a near ally of Celmisia, is largely represented in European gardens, some of the species forming large shrubs and proving hardy in the warmer parts of England. The species under notice is, however, too tender for out-of-door cultivation here, but in a cold greenhouse it is happy, growing very slowly, ultimately forming a dwarf thick-stemmed, branched, low shrub, with oblong leathery leaves six inches long, the under side covered with a thick whitish felt. The flower-heads are produced singly on axillary peduncles six inches long; they are shaped like those of the Cornflower, Centaurea, and are two inches across, the ray-florets overlapping, toothed at the apex and white, the disk-florets yellow. It will be seen that this species differs very widely from the rest of the cultivated Olearias. It is a native of rocky river-banks in Middle Island, New Zealand, whence it was introduced about ten years ago. There is a good figure of it in *The Garden* for 1888. It is now flowering at Kew.

Dimorphotheca Ecklonis.—I noted this plant last year as a new introduction from south Africa of subshrubby habit, with large Daisy-like flowers colored purple outside and white within. It was grown at Kew as a summer bedding plant, and attained a height of eighteen inches, flowering freely from July onward till the frost came and killed the plants outright. Some plants grown in pots and wintered in a cold house have been a surprising success, the stems being quite woody at the base, the branches leafy and three feet high, and the flowers most abundant all through the spring. The leaves are lanceolate, toothed and about five inches long, and the flowers, which are three inches across, are an elegant white, with a pale blue disk, the reverse of the ray-florets being purple. They close unless exposed to sunlight, as do the Gazanias. Messrs. Veitch & Sons are working up a stock of this plant for distribution. It is easily propagated from cuttings. The Kew plants were raised from seeds collected near Port Elizabeth. A figure prepared from one of them has lately appeared in *The Botanical Magazine.*

Campanula Balchiniana.—This pretty little plant obtained a certificate last year when it was shown by Mr. Balchin, of Hassocks, who stated that it originated from a cross between Campanula fragilis (hirsuta) and C. isophylla. I lately saw the plant in quantity, and after careful comparison I am convinced that it is simply a variegated sport from C. fragilis. Whatever its origin, however, it is a beautiful addition to the small trailing Campanulas which grow freely either in the sheltered border, on the rockery, in pots or in suspended baskets. Every one knows the value of C. fragilis for these purposes, and C. Balchiniana is C. fragilis in everything except leaf-coloration, and in this it is a charming mixture of creamy-white green and rose-pink, the latter color being most conspicuous on the young leaves. I anticipate for this plant much popularity. It will probably be greatly valued for carpet bedding. Grown in baskets it is a superb plant. The stock has been secured by Messrs. Veitch, who are sending it out as a new plant this year.

Leschenaultia biloba.—Twenty years ago one might have found half-a-dozen species of Leschenaultia among the popular greenhouse plants grown in England; now only one is grown, and that by very few cultivators, most of those who essay its cultivation failing miserably. It may be called a shrubby Lobelia, the branches and leaves being soft, otherwise heath-like, and the flowers of a bright sky-blue color. A well-grown specimen is one of the most beautiful of pot-plants. The most successful grower of this species is Mr. Balchin, of Hassocks, near Brighton, in whose nursery I lately saw large batches of it in various sizes. They are grown in the same kind of soil and treated in the same manner as Erica hyemalis, with this essential difference: Leschenaultias have fleshy roots; they are therefore able to bear drought, and Mr. Balchin says the only secret there is in their management is that they must be kept dry all through the winter. If they flag give them a little water, but do not give them any more until they flag again. In a cool house with an ash bottom they require no water for months.

Boronia heterophylla.—There is no more beautiful greenhouse plant than this. Unfortunately, however, it resembles its congeners in being somewhat difficult to grow, although any one who can manage Epacrises can

Fig. 27.—Cladothamnus pyrolæfolius.—See page 216.

1. A flowering branch, natural size. 2. A fruiting branch, natural size. 3. Vertical section of flower, enlarged. 4. A stamen, front and back views, enlarged.

grow this Boronia. The best grower of it that I know treats the plants exactly as he treats Epacris—that is, in March or April he cuts them in hard, places them in a warm moist house to break, repots them in a mixture of peat and sand when the new growth is half an inch long, and keeps them warm until July, when they are gradually inured to a lower temperature and more air, and are finally placed in a cold house. Grown in this way plants in five-inch pots are perfect little specimens, eighteen inches high, crowded with branches which are bent over with the profusion of bright rose-crimson bell-shaped flowers. In a cool house the plants bloom in April and remain in flower about two months. This species was introduced to Kew about fifteen years ago by Miss North, who found it wild in West Australia and described it as "very beautiful, scent delicious, quite unknown."

Cypripedium spectabile, var. album, a pure white-flowered variety of the Moccasin Flower, is the most attractive Orchid in flower at Kew. It is not what is generally known as the white variety, which has a tinge of rose in the segments, but is pure snow-white. We grow a large number of plants of this Cypripedium in pots in a cold house or frame and they flower in May, when they are worthy of a place among the choicest of cool-house Orchids. Of course, we grow it largely in the open air as well. The best examples of it that I have ever seen were growing in boggy soil on the edge of a pond, the treatment being almost subaquatic; they were large, healthy clumps of stems two feet high, each bearing two, a few of them three flowers. We also grow them in pots for the cold house and flower them in May; the Japanese Lady's-slipper, C. Japonicum, and the large, handsome C. macranthum from Siberia, C. pubescens and C. acaule also flower with us in May when grown in pots.

Cytisus Kewensis.—This is a hybrid between Cytisus albus, the white Portuguese Laburnum, and C. Ardoini, a yellow-flowered prostrate species from the Maritime Alps. It originated in the Kew Arboretum, where there is now a bed of it in flower. It promises to be a useful plant for the rockery and for small gardens, as it is of dwarf, almost prostrate, habit, with small hairy leaves and cream-yellow flowers, resembling those of C. præcox both in size and color. It is perfectly hardy. Some plants of it were shown at the last meeting of the Royal Horticultural Society and were much admired. C. præcox is magnificent at Kew now, two very large round masses of it in a conspicuous position on a lawn being literally clouds of pale yellow flowers. It will be remembered that this most useful hardy shrub is the result of a cross between C. albus and C. purgans.

London. *W. Watson.*

New or Little-known Plants.

Cladothamnus pyrolæfolius.

Cladothamnus is a genus of woody plants of northwestern America of the Heath family. The original species, Cladothamnus pyrolæfolius,* is distinguished by solitary five-petaled flowers terminal on short leafy branches, or rarely axillary, anthers opening laterally for about half their length with narrow, elongated, terminal pores, and five or six-celled globose capsules. It is a glabrous shrub with slender reddish upright stems from four to ten feet tall, clothed with thin obovate lanceolate mucronulate, nearly sessile, pale green leaves from an inch and a half to two inches and a half in length and about half an inch in width, and flowers nearly an inch across when expanded, their light reddish or pink petals, which are rather longer than the acute foliaceous calyx-lobes, being exceedingly evanescent.

Cladothamnus pyrolæfolius grows along the borders of the upland meadows of Alaska, where it opens its handsome flowers in succession during several weeks in summer.

Professor Green has recently shown that a second species of Cladothamnus, long confounded with the Alaskan plant, which he describes as Cladothamnus campanulatus,† inhabits the high mountains of Washington and British Columbia, and differs from the type of the genus in the glandular hairs on the margins of the sepals, in its campanulate corolla with petals joined into a short tube, and in the dehiscence of the anthers, which open only by large terminal pores. The leaves are short-stalked and clothed on the under surface of the veins and on the petals with reddish hairs, and the flowers are solitary, in pairs, or in threes, from lateral buds, and are borne on short hirsute pedicels.

Cladothamnus has probably not been successfully introduced into gardens. The Alaskan species might flourish in those of western Europe, although it would probably not thrive in the eastern states. The other, which appears to be a rare plant, might possibly grow in our gardens, where the attempt to cultivate it is certainly worth making. Our figure of Cladothamnus pyrolæfolius, on page 215 of this issue, is from a drawing made by Mr. Faxon from a specimen collected by Mr. M. W. Gorman in 1893 on the woody borders of upland meadows near Short Bay, Alaska.

C. S. S.

* Bongard, *Mém. Phys. Math. et Nat.*, pt. ii.; *Acad. Sci. St. Pétersbourg*, ii., 37, t. 1 (*Fl. Alaska*) (1831).—Gray, *Syn. Fl. N. Am.*, ii., pt. i., 44, in part.—M. W. Gorman, *Pittonia*, iii., 75.
Tolmiea occidentalis, Hooker, *Fl. Bor. Am.*, ii., 41 (1834).

† Cladothamnus campanulatus, Green, *Erythea*, iii., 65 (1895).

Cultural Department.

The Rock Garden in May.

The rock garden is never more interesting than during the month of May. The Moss Pinks, forms of Phlox subulata, are in the height of their beauty; compacta, pink; atropurpurea, purple; Fairy, white, tinted with rose; Model, carmine; The Bride, white; and Sadie, a lovely true blue, a sport from Phlox subulata nivalis. The color-contrasts obtained by planting these with Iceland Poppies, bright yellow Alyssum Gemoneuse, perennial Candytufts and scattered Columbine is truly charming. Anchusa Barretieri is new to us and one of the handsomest Alkanets we have ever grown. It is comparatively dwarf, not more than a foot and a half in height and bushy and free. Like the majority of the Borageworts, to which family the Alkanets belong, the flowers are deep blue. Columbines (Aquilegia) in variety are an attractive feature, but of late years the borers have destroyed large numbers of plants, and to keep up a display of the choicer kinds losses must continually be made good from our reserve garden. The chrysantha × cœrulea hybrids are hardy and free, giving all the shades possible between blue and yellow. Whatever may be said against the natural crossing of the different types of these plants, they are at least interesting, and to the uninitiated just as handsome. The distinct but commoner Aquilegia Canadensis has been improved by the infusion of alien blood, so that now we have varieties with larger flowers, mostly later blooming, and varied colors. The true A. Olympica, blue and white, is one of the handsomest Columbines. Iris verna, sweet-scented, lavender-flowered—an American species—is among the prettiest of dwarf Irises. I. oxysepala is a hardy Siberian kind with slender tough leaves and lilac-colored flower. Centaurea montana, with heads of blue, and silvery foliage, is worthy a place anywhere. Verbascum phœniceum, in bloom, is curious, if not beautiful; all its leaves are radical, primrose-like, hugging the ground in a rosette, from the centre of which comes a leafless scape a foot or more in height, with rotate flowers for the most of its length in colors varying from dull purple to white. Viola cornuta, in several varieties—Perfection, mauve; Magnifica, purple, and Lutea—is continually in bloom. Neat-habited, healthy plants like these are always pleasing. Phlox reptans and P. amœna are two rosy-colored varieties, and P. divaricata comes in shades between blue and white. Besides the Iceland Poppies, which we have had from the opening of spring and shall have until autumn, there will be a temporary display of the gorgeous oriental kinds in crimson and orange tints, while Papaver rupifragum gives orange-red flowers with an indescribable sheen like changeable silk. About the same time the pale yellow Day Lily, Hemerocallis graminea, will be in bloom. The yellow Globe Flowers, Trollius, are handsome, never untidy, and continue

in bloom a long time. The incurved Buttercup-like flowers are useful for cutting and last well. Anemone umbellata is new; the color of its flowers is between yellow and green, and though it may not be handsome, its habit is good, and among a number of types there is room for it. Scattered tufts of the Fire Pink, Silene Virginica, give touches of scarlet, and the handsome S. Pennsylvanica is not to be despised because it is common. The true Pinks, Dianthus, are in bud, and in a few days we shall have the Ragged Robin, Lychnis flosculi; Bachelor's Button, the double-flowered L. diurna, and the German Catchfly, L. viscaria, fully out.

Wellesley, Mass. *T. D. Hatfield.*

A Few Roses.

ONE welcomes the first Roses not alone for their beauty, but also as an indication of genial weather. The early Roses have a perennial charm and a beauty all their own. Though the species have been known a long time, and are not rare, they seem to be cultivated mostly in large plantations, and make their way slowly into small gardens. Owing to the cool weather, Rosa rugosa did not precede the other species at as long an interval as usual, and the Burnet Rose, R. spinosissima, followed it closely. This charming little Rose is perfectly hardy, with single creamy white flowers. The leaves are small and the thin stems bear enough prickles to merit its specific name as the very spiniest. It makes a neat bush about three feet high, and is always a striking plant in the hardy border. It is to be had readily from seed, in which way it strayed into my garden from Tenby. I have been told by a high authority that Polyantha Roses are not of much account, but there is in the border a Remontant form or hybrid of this Rose which could not well be spared. It is very hardy, forms a bush about three feet high, and bears, during the season, frequent crops of small single flowers of a beautiful pink color.

Another hybrid much valued here is the Dawson Rose, which is now coming into flower. If allowed to grow naturally this is a most beautiful plant at flowering time, when its long shoots are covered with small semidouble pink flowers in clusters, the buds opening in succession. A spray six to nine feet long makes a glorious decoration, and the old wood will soon disappear for that service, much to the relief of my helper, who objects seriously to untrammeled growths. But the growth of this Rose is slight in comparison with that of Rosa multiflora, which in wild luxuriance covers twenty-five feet or more of fence, and would probably spread over the entire garden if left unchecked. One is sorry to touch knife to a plant which evidently so enjoys life and in a few days will be covered with myriads of fragrant blossoms. A few, at least, of the large number of single Roses should be in every garden.

The general culture of Roses offers some difficulties in this climate, owing to hot summers and to the special fondness of many species of insects for their foliage. It has always seemed to me that if the small grower would exchange most of his Hardy Perpetual Roses (usually bought under the impression that they were perpetual bloomers) for Teas or hybrid Teas he would have more satisfaction and rid his garden of some unsightly objects, for after the Rose season the plants are usually neglected. Tea Roses produce flowers all the season, and, naturally, their wants are more apt to receive attention. Perhaps, on reflection, that hint will not be of much service farther north than this, though among the Teas some will be found much hardier than others. La France requires no protection here; neither does Auguste Guinoisseau (the alleged white La France). There are other surviving Tea Roses in the garden, but the most interesting and promising one is the comparatively new Kaiserin Augusta; ten plants which came through last winter untouched are now growing strongly and are full of well-developed buds. This variety produces an abundance of handsome white flowers continuously during the season, and I know of no Rose of its color which is more likely to give complete satisfaction.

Elizabeth, N. J. *J. N. Gerard.*

Crinum amabile and C. Asiaticum.

CRINUM AMABILE has been much admired in the Palm-house here for the past two or three weeks. This is a noble plant, and when well grown its foliage is strikingly handsome, even when it is not in flower, and when its flowers are open their presence is made known to any one who enters the house where the plant is grown by their delightful fragrance, even before they are seen. This is by no means a new plant, since it was introduced to Europe over fourscore years ago from Sumatra. This genus Crinum belongs to the Amaryllis family, and the part underground, or bulb, is not very large. It has a neck about a foot in length, however, and is nine or ten inches in circumference. Its thick, dark green leaves measure four feet in length and four inches in breadth, and they taper gradually to a point. They also arch gracefully and add much to the appearance of the plant. The scapes measure about three feet long and are crowned with umbels consisting of about two dozen flowers. The perianth tube is bright red and is four inches long, and the segments are the same length and color and revolute. The flowers in the umbel do not open all at the same time, and therefore the flowering season is in this way very much lengthened.

Another truly noble Crinum which ought to be in blossom in another week is C. Asiaticum. The bulb of this plant measures about five inches in diameter and has a neck about a foot in length. Its deep green leaves are long and arching. The plant grown here is about four and a half feet in height and nearly the same in breadth; the flowers are white and produced in umbels of about fifteen to twenty flowers.

Crinums thrive in a compost of turfy loam, dry cow-manure and a little charcoal. When they are grown in large pots they do not require annual repotting; in fact, our large plants have not been shifted for the past five years. A top-dressing of good rich soil is all that is necessary, and when they are well established liquid-manure is very beneficial. When the plants are growing they need an abundant supply of water. For large greenhouses where there is plenty of room these stately Crinums associate well with such plants as Palms, Cycads, Bananas and Dracænas.

Harvard Botanic Garden, Cambridge, Mass. *Robert Cameron.*

April Irises.

WITH reference to the article on page 167, allow me to state that my description of the color of the flowers of Iris Assyriaca is based on an average. Among a hundred bulbs twenty are pure white, twenty more milk white, and the rest a bluish white. It is earlier than I. Sindjarensis, and if kept dry for three months a very free bloomer. I wonder my friend Mr. Gerard does not mention I. Bosniaca, which, although of the rhizomatous section, is here in flower from the 15th of April onward; it is rich, free-flowering, of a soft lemon-color, and the flowers are comparatively large, much better than any in the Pumila section, and standing slight frosty nights unharmed. To these spring-flowering Irises the central Asiatic species, I. Korolkowi, I. vaga, I. stolonifera and I. Leichtlinii form a connection with the later-flowering kinds of the rhizomatous section. The climate of the United States of America seems to coincide perfectly with the wants of these Irises.

Baden-Baden. *Max Leichtlin.*

Propagating Lilacs.—Referring to the notes on Lilacs and Privet in the last issue of GARDEN AND FOREST, I would say that while it is plain that the Privet cannot be recommended as stock where it is not hardy, there are many reasons to justify its use elsewhere. In the first place, nurserymen use it because there is no other way to get up a stock of the newer kinds as quickly; but this is not the only reason. The Privet dwarfs the Lilacs and causes them to flower in a very short time, and in a profuse way that rarely occurs when on their own roots, and as dwarf shrubs they are available for a great many purposes. Florists use them for forcing, with certainty of their flowering. As they are usually budded close to the ground they can be set below the union and thus form roots from the Lilac scion, as is often done in the case of the dwarf Pear.

Germantown, Pa. *Joseph Meehan.*

Correspondence.

The San José Scale Disease.

To the Editor of GARDEN AND FOREST:

Sir,—On page 200 of the current volume of GARDEN AND FOREST is a note taken from *The Country Gentleman* regarding this interesting topic. I have a bulletin almost completed on this subject, but an unusual demand has been placed on my time this spring, making it difficult to complete the manuscript. It was my intention not to announce this valuable discovery until the bulletin appeared, but a portion of my report to the Florida Horticultural Society was on this subject, and that seems to have thwarted my purposes.

The earliest intimation of this disease was observed in 1895, but the discovery and experiments were not made until 1896. The experiments indicate that this fungus (Sphærostilbe coccophila, Tul.) is an effective and practical remedy for this

scale in Florida, but we are by no means assured that it will be of any value in the north, either east or west. Since, however, extensive experiments are already under way in the east and west, we may look for reports from these sections in reasonable time.

The subject is of such importance that to give information and prevent misconceptions I offer the following general remarks:

1. The success attained by using this fungus from cultures makes it a promising remedy against the San José scale.

2. It is "nature's own remedy," and all that we do is to disseminate it properly.

3. It was discovered on a native scale (Aspidiotus obscurus, Coms.) at Lake City by Mr. A. L. Quaintance. Later finds indicate that it is quite generally distributed on these scales (A. obscurus) at Lake City and at De Funiak.

4. The fact that it is native to this state insures a constant source of supply and obviates the use of cultures that might have become attenuated.

5. Bread culture can be produced in large quantities at a slight expense.

6. The fungus will doubtless prove an excellent remedy in California.

7. As the scales are killed they wash from the tree, leaving the bark clean and free.

8. Most of the applications of this fungus were made by orchardists, proving that it is possible for the fruit grower who may not be a scientist to apply the laboratory-grown material properly.

Copies of our bulletin may be obtained upon application to O. Clute, Director of Experiment Station, Lake City, Florida.

Lake City, Fla. *P. H. Rolfs.*

May Flowers in Southern Michigan.

To the Editor of Garden and Forest:

Sir,—The cool weather which has prevailed since frost departed has prolonged the time of April flowers here well into May. In a wooded situation, on the 19th, I found masses of Phlox subulata spread over the sandy beach of a lake for rods in extent, giving its share of sweetness to the breeze. The beautiful scarlet pendent flowers of the wild Columbine were swinging everywhere among the delicate greens. For grace and delicacy of flower and leaf the early Meadow Rue, Thalictrum dioicum, could scarcely be surpassed as it hung fringing the edge of a shelving bank. Geranium maculatum scattered brightness here and there, with Lithospermum hirtum close at hand. Smilacina stellata, which grew in profusion and exhaled a fragrance somewhat like Lily-of-the valley. An early Vetch, Viccia Americana, is a pretty climber well worthy a place in the garden; it is graceful in vases and keeps well; Lonicera parviflora, var. Douglasii, was the only Honeysuckle noted in bloom at this date. The flowers are dark red, tinged with yellow. Actea spicata, var. rubra, has a globular cluster of flowers, white in all their parts except the rather prominent scarlet stigma. The conspicuous fruit of both the Acteas in this region makes them desirable for the shady border of a garden. Blue Violets made mats among the shrubs, and more rarely the beautiful Viola pedata was seen. Climbers of many kinds are plentiful in all wild places hereabout, and it is surprising that farm-houses so generally lack these graceful decorations. They give to a very humble dwelling a cheerful aspect not attainable by other means.

White Pigeon, Mich. *Dorcas E. Collins.*

Forest Preservation.

To the Editor of Garden and Forest:

Sir,—It is well known that scientific forestry, while promising only a very small profit on forest capital, is calculated at the same time to make that profit continuous. This offers little inducement to individuals, unless they be rich and desire the forest more than the income; but the National Government, being long-lived, can afford to wait. Towns and communities are in a somewhat similar position, and it would seem only natural for them to provide for a continuous revenue by securing suitable forest land in their vicinity. This ought not to be delayed too long, for with the increase in population and the decrease in forests the prices of forest land will be constantly rising; besides, it will require years to put a "natural" forest into a "normal" state (scientifically speaking).

Of course there are other reasons, often much more significant, for forest preservation. It would be unwise, I think, for a town to acquire forest property for revenue when the same forest might fitly provide for a future rural park or pleasure-ground. My suggestion is made in the hope that some more of our woods may be saved from general destruction.

Muenden, Germany. *G. F. S.*

Current Literature.

The Cultivation of Plums.

THE literature on the growing of Plums in this country is very scanty for the reason, perhaps, that the cultivation of this fruit has hardly advanced beyond the experimental stage, except in a few places like western New York and on the Pacific coast. Professor Bailey's notes upon Plums, which have just been published as Bulletin 131 of the Cornell Experiment Station, are therefore very timely. The notes begin by grouping the various types, and this arrangement shows at once how complicated the subject is botanically owing to the number of distinct species from which the cultivated varieties have been derived. The following groups are named:

(1) Domestica or European type, Prunus domestica. Native to western Asia. Comprises the common or old-time Plums, such as Green Gage, Lombard, Bradshaw, Yellow Egg, Damsons and the like. The leading Plums from Lake Michigan eastward and north of the Ohio and on the Pacific slope.

(2) The Myrobalan or Cherry-plum type, Prunus cerasifera. Native to south-eastern Europe or south-western Asia. Much used for stocks upon which to bud Plums, and also the parent of a few named varieties, like Golden Cherry; De Caradeuc and Marianna are either offshoots of it or hybrids between it and one of the native Plums.

(3) Japanese type, Prunus triflora. Probably native to China. The type seems to be generally adapted to the United States, and will certainly be of great value to both the south and north.

(4) The Apricot or Simon Plum, Prunus Simonii. Native to China. Widely disseminated in this country, but little grown except, perhaps, in parts of California.

(5) The American type, Prunus Americana. The common wild Plum of the north, and extending westward to the Rocky Mountains and southward to the Gulf and Texas. Admirably adapted to climates too severe for the Domestica Plums, as the plains and the upper Mississippi Valley.

(6) The Wild Goose or Hortulana type, Prunus hortulana. A mongrel type of Plums, comprising such kinds as Wild Goose, Wayland, Moreman, Miner and Golden Beauty. No doubt, hybrids of the last and the next.

(7) The Chickasaw type, Prunus angustifolia (or P. Chicasa). Native to the southern states, and there cultivated (from southern Delaware southward) in such varieties as Newman, Caddo Chief and Lone Star.

(8) The Sand Plum, Prunus Watsoni. Native to Kansas and Nebraska. A bush-like species, little known in cultivation. A hybrid of this and the western Sand Cherry is the Utah Hybrid Cherry.

(9) The Beach Plum, Prunus maritima. Native to the coast from New Brunswick to Virginia. In cultivation represented by the unimportant Bassett's American; also as an ornamental plant.

(10) The Pacific coast Plum, Prunus subcordata. Native to Oregon and California. Sparingly known in cultivation, chiefly in the form known as the Sisson Plum (var. Kelloggii).

With these ten types coming into cultivation in the rapidly enlarging fruit zones of our immense country, who can prophesy what the final outcome as to types and varieties may be?

This bulletin treats chiefly of the common European type, which includes (1) the Damsons, with small firm fruit, of various colors, borne in clusters, and generally having small leaves; (2) the Green Gages, of which the Reine Claude is the commonest representative in New York, but comprising various other plums which are smallish, green or yellowish green, spherical and of high quality; (3) large yellow plums, such as Coe's Golden Drop and Washington; (4) large colored plums, red, blue or purple, like the Blue Prunes, Lombard, Bradshaw and Quackenboss. These will always be the leading types for western New York, although the Japanese varieties will be useful in adding variety to the list because they have many early varieties, and the fruit is so firm that it carries well. Besides this, the trees are vigorous, very productive and less liable to black-knot and shot-hole fungus than are those of the Domestica type. The Americana Plums are more hardy than either, but they are not to be recommended for market cultivation in New York because they are inferior to the others in quality, and their superior hardiness counts for little since the winters are rarely so cold as to injure the Domesticas.

The plum is a fruit which has no regular standing in the market as pears and apples have, and depends more or less for sale upon the general supply of other fruits. This means that since the plum is of secondary importance in the market commercial growers can easily plant too many trees. The Plum thrives on a great variety of soils, but does best on clayey loam, and usually upon land suited to Pears, or the heavier soils upon which Apples will flourish. The greater number of trees grown in New York are grown on Myrobalan stock, a native of south-eastern Europe and south-western Asia. There are some varieties, however, which overgrow the stock so that it is likely to sprout from the ground and cause trouble. Professor Bailey thinks that the Domestica Plum itself is the ideal stock, although it is difficult to secure seed, and the stock is variable and rather likely to be injured in the nurseries by leaf fungi. It is for this reason that the Myrobalan has supplanted it. The Peach is largely used as a stock in the southern states and is gaining favor in New York. It is probably better on sandy lands than the Myrobalan, although some varieties, like the Lombard and French Damson, do not unite well with the Peach. Many varieties of Plums are such slow and crooked growers in the nursery that it is advisable to graft them on some strong straight stock, and the Lombard is undoubtedly the best for this purpose. Plum-trees are usually planted when two years old from the bud, although some of the strong-growing kinds may be planted at a year old. They should be set as far apart as Peaches are—that is, from fifteen to eighteen feet apart each way, or they may be planted eighteen or twenty feet apart one way or from ten to twelve feet apart the other, in which case cultivation in one direction is eventually stopped. When planted the trees are pruned in the same way as Apple-trees are, and it is advisable generally to start tops as low as possible and yet allow the working of the curculio catcher below them. After four or five main limbs have been allowed to form the framework of the top, the central stem is often cut out, but it may be allowed to remain. If the trees become too tall and whip-like they may be headed in, but it ought to be remembered that this upward growth commonly ceases and the tree begins to spread when bearing time arrives. If they seem to be making too vigorous growth it is better to withhold fertilizers or cultivation than to stop it by heading them in, since this only makes the growth stronger.

The black-knot is best kept in check by systematically cutting it out wherever seen, and if the trees are thoroughly sprayed every year with Bordeaux mixture for the leaf-blight the black-knot will make comparatively few inroads into the orchard. The blight which causes the leaves to fall in August or September is one of the most serious diseases of the Plum, but it can be kept in check by spraying with Bordeaux mixture two or three times during the summer. The fruit-rot is also the work of a fungus; the dead and dried fruit may often be seen hanging on a tree all winter, and in such cases it is probable that the fruit-spur will be killed. In handling this disease it must be remembered that some varieties are more susceptible than others. The Lombard is one of the worst. Again, if the fruit grows in dense clusters the disease is more apt to be severe, and therefore the thinning of the fruit is an admirable preventive of this as well as an efficient means of increasing the size and quality of the fruit. The specific treatment for the disease is to spray with the Bordeaux mixture.

The Plum scale has created much alarm, and, although formidable, it may be held in check by thorough spraying with strong kerosene emulsion in the winter-time. Curculio is the most widely known enemy of the fruit. The mature beetle lays eggs in the fruits when they are small; these hatch, and the little maggot bores into them. Attacked fruits ordinarily fall, but if they are not stung until they are half-grown they may adhere to the tree, when they will be wormy and gummy at picking time. Taking advantage of the fact that the mature beetles are sluggish in the morning they may be jarred into sheets or canvas hoppers, which can be moved from tree to tree upon a wheelbarrow-like frame. There is a slit in one side of the hopper which allows the tree to stand in the middle of the canvas, and then two or three sharp jars with a padded pole or mallet will bring the insects down, and they roll into a tin receptacle at the apex of the hopper. An active man can attend to three hundred or four hundred full-bearing trees in six hours.

The most popular variety of Plum, and one of the poorest, is the Lombard. Its merits are its great productiveness, vigor and hardiness. The fruit is only fair in quality, and it ripens when the market is full. It is very susceptible to the leaf-blight and fruit-rot, and yet many orchards planted with this variety exclusively have been successful commercially. Perhaps varieties which are specially early or late and those which have pronounced colors, especially dark red or purple, will prove the best market fruits. Some dark yellow varieties are also salable, but those of an ill-defined reddish color, brown or light yellow are usually not profitable. And yet the Reine Claude is a yellowish green plum. It is saved, however, by its established reputation as a culinary variety. So far as known, Plums of the Domestica and Japanese type are self-fertile, but it is always the safest course to plant varieties in alternate rows.

These notes of Professor Bailey's are supplemented by a descriptive list of varieties by Mr. S. D. Willard, who is an excellent observer, and who has had such a long experience in plum-growing that he is a recognized authority in the matter. At various times the Cornell station has published bulletins on particular phases of plum-growing, and these are all referred to in their proper place, so that this little treatise will be found very complete and useful.

Recent Publications.

The Fertility of the Land. By Isaac Phillips Roberts, Director of the College of Agriculture and Professor of Agriculture in Cornell University. The MacMillan Company. 1897.

This is the latest publication of the admirable Rural Science Series, which is edited by Professor Bailey, and its purpose is well set forth in the subtitle as a Summary Sketch of the Relationship of Farm Practice to Maintaining and Increasing the Productiveness of the Soil. We do not mean that because the work is specifically devoted to certain phases of farm practice it ignores agricultural science. On the contrary, the treasures of science are continually drawn upon to explain the fundamental reasons for the ordinary operations of the farm. The very first chapter, entitled "An Inventory of Land," ought to prove of fascinating interest to a young farmer who has never made any estimate of the amount of plant food that is found generally in soils, or of what sort of food and how much of it is required by his crops, or how stores of potential fertility in soil and subsoil can be made available, or how one can learn what elements ought to be added to maintain the supply and increase its usefulness. All this is science, but it is applied science, and science so skillfully adapted to everyday use that it becomes the very philosophy of farm practice. The next chapter on the evolution of the plow and its use in tillage shows how the moving of the soil in the right time and in the right way helps his land in a hundred subtle ways of which the thoughtless farmer has never dreamed. In short, the book will be found helpful to the farmer in that it will enable him to go through the routine of his everyday work with intelligence, and therefore with skill and the assurance of wider success. In an editor's preface, Professor Bailey speaks of the book as the ripened judgment of the wisest farmer he has known. We are told that Professor Roberts has been a successful farmer at the same time that he has been a successful teacher of agriculture and a distinguished experimenter. He has also had the advantage of travel, and therefore his opinions on farm methods ought to be of value. He has the philosophic temper, too, which has moved him to inquire into reasons and results. His book, then, is a record of his own experience and the experience of others in maintaining the productivity of the land; and since this is the fundamental problem in practical farming, its discussion throws light on so many details of farm practice that we agree with Professor Bailey when he says that the book comes as near being a treatise on agriculture as any single volume can be.

Occasionally one comes upon a bit of moralizing that seems a little out of place, or a generalization which the data hardly justify, or a crude statement now and then such as one trained in early life to scientific thinking would not make, but, taken as a whole, it is a singularly useful volume which covers a wide range of subjects, all of which are treated succinctly and yet clearly and with a due regard to their relative importance.

Notes.

The number of visitors to the Zoölogical Gardens in Regents Park, London, during the year 1896 was 665,000. The Aquarium of this city has been open less than six months and the visitors so far number more than 700,000.

One of the late farmers' bulletins, issued by the United States Department of Agriculture, is entitled "How to Grow Mushrooms," and has been prepared by William Falconer. It is a miniature treatise comprised within twenty pages, but it gives concise directions for every process, from the preparation of the bed to the transportation of the crop to market in an attractive condition.

This has been an unusually favorable spring for flowering shrubs, since there has been no hot period to force them into bloom, and the flowers have had opportunity to develop slowly, attain their best form and remain a long time. The Virginia Fringe-tree, Chionanthus Virginica, is particularly beautiful. Its panicles of pure white flowers hang long and full, and in such numbers as to cover the tree completely as with a mist of snow. The Fringe-tree is dilatory about unfolding its leaves, but, apart from this fault, it is one of the very best of our small trees. Its habit is good, its leaves clean and healthy, its individual flowers delicately beautiful and the flower-clusters unexcelled in grace.

In response to invitations issued to various landscape-architects, park commissioners, city engineers and others who take an interest in public pleasure-grounds, a convention was held at Louisville, Kentucky, on the 20th and 21st of May, at which many interesting papers were read, and, after a full discussion, a society was formed, to be known as the Park and Outdoor Art Association. The following officers of the permanent organization were elected: President, J. B. Castleman, of Louisville, Kentucky; Vice-President, L. E. Holden, of Cleveland, Ohio; Secretary and Treasurer, Warren H. Manning, of Brookline, Massachusetts. The membership fee was fixed at $2.00 a year, and all persons who desire the advancement of art out-of-doors, including land-owners, park officers, village improvement societies and the like, are invited to unite with the association.

Excepting Lima beans and sugar corn, all the summer vegetables are now in the New York markets, and sweet and white potatoes are almost the only old-crop vegetables still offered. Beets, asparagus and peas all come from fields as near by as New Jersey and Long Island, besides radishes and rhubarb. String-beans and cucumbers come from Georgia and South Carolina, and eggplants, squashes, tomatoes and celery from Florida. Cabbage is coming from Virginia in large quantities. Other vegetables in season are new kohl rabi, carrots, turnips, cauliflower, celeriac, okra and peppers, and onions from Louisiana, Egypt and Bermuda. Vegetables for "greens" and for soups, salads and sauces are offered in almost endless variety, as beet-tops, spinach, sorrel, young celery, parsley, chives, taragon, mint, tansy, dandelion, cress, lettuce and endive. Mushrooms continue plentiful, and sell for fifty cents a pound.

The Orchid Review gives an account of some interesting observations which have been recently made at Kew by Mr. Griessen, who has charge of the Orchid-house there. He caught a bumblebee with three different kinds of pollinia attached to it. Between the eyes were two pairs from some Odontoglossum, on the middle of the thorax four pollinia of a Cattleya, and on the back of the thorax between the wings, those of some Vanda, which proves that the bee fed among various species. Another interesting example was that of a common bluebottle fly with the pollinia of a Cirrhopetalum affixed to the middle of its thorax. The flower had evidently attracted the insect by its fœtid odor. Professor Rolfe gives other examples which have been witnessed, and he well remarks that here is an interesting field of inquiry for all who have an opportunity of observing the fertilization of Orchids in their native homes.

Professor Trelease invites the attention of botanists to the facilities afforded for research at the Missouri Botanical Garden. A large number of native and exotic species and horticultural varieties are grown in the garden, the arboretum and the adjoining park, and the native flora accessible from St. Louis is large and varied. The herbarium includes 250,000 specimens, representing the vegetable life of Europe and America, and it is supplemented by a collection of woods, including veneer transparencies and slides for the microscope. The library contains 12,000 volumes, 13,000 pamphlets and a complete authors' catalogue. These facilities are at the disposal of professors of botany and others competent to carry on research work of value in botany or horticulture, subject only to such restrictions as are necessary to protect the property of the garden from injury and loss. Persons who wish to make use of them are invited to correspond with the Director, outlining, as far as possible, the work they wish to do, and giving notice, so that provision may be made for the study of special subjects.

Mr. L. F. Kinney, Horticulturist of the Rhode Island Experiment Station, has been observing the Loganberry, which was described with some fullness nearly three years ago (vol. vii., p. 466) in this journal. In an interesting bulletin just issued on the subject, Mr. Kinney publishes a letter from Judge J. H. Logan, of Santa Cruz, California, who planted the seed from which it originated in 1881. The letter gives an interesting account of the plant, which is supposed to be a hybrid between a variety of the European Raspberry and a variety of the wild Blackberry of the Pacific coast. It has been called the Red Blackberry, and the fruit, which is shaped like that of a Blackberry, has a slight but distinct raspberry flavor. The fruit ripens in Rhode Island a trifle later than raspberries and lasts a little longer. It is not highly flavored, but is admirable when cooked, and as a sauce fruit it excels both the blackberry and the raspberry. As the canes trail on the ground naturally some provision must be made for keeping the fruit clean, and it seems to succeed well on a trellis of galvanized iron wire. The trailing and flexible texture of the Loganberry canes makes it easy to cover them, a process which is perhaps advisable in all localities north of this city, for instance, where it might winter-kill. The plant is propagated by stolons, although the seeds germinate readily. Unfortunately, however, the seedlings are comparatively worthless when grown for fruit. Altogether, the Loganberry is the most promising of the new types of small fruit that have been introduced within recent years.

Steamer baskets in the fancy-fruit stores, made up for travelers, are showy with a wide variety of the smaller fruits. One observed on Saturday contained rough-skinned Siam oranges, peaches, Black Hamburg and Almeria grapes, the latter a special favorite with voyagers, California cherries, pears and bright Northern Spy apples. Even so early in the season many of the summer fruits are represented in the fruit stores and markets, although some are yet far from being at their best. Peento, Honey Sweet and Bidwell peaches are coming from Florida, and the first Hale peaches, from Georgia. Other Florida shipments are muskmelons and watermelons. Wild Goose plums, from Georgia, are offered, and blackberries and huckleberries from North Carolina. Green gooseberries come from Maryland. The first North Carolina cherries were seen here on Saturday, but did not rival the large and firm California fruit. The strawberry season is at its height, although there is no ripe fruit from this state. The North Carolina season has passed and the best berries are from Maryland, Delaware and New Jersey. Prices range from ten cents for berries of fair quality to thirty cents for a quart box of large, firm, bright, highly flavored fruit of choice varieties. Some Pringle apricots, from California, were seen here last week, small, and with no value beyond their rarity at this time of year. Valencia seedling oranges, from California, the choicest oranges now in season, cost seventy-five cents a dozen. They are juicy, of excellent flavor and almost seedless. The last Easter Beurre pears cost $1.00 to $1.50 a dozen, and the long-keeping P. Barry bring the same price. Above 100,000 bunches of bananas reached this port last week; this fruit is low-priced and is fully grown and of rich flavor. Pineapples are also abundant and cheap, and are coming from the Bahamas, Cuba and Florida. The small sort known as Red Spanish, while less handsome, is preferred by some good judges for its superior quality. These cost from fifteen to forty cents each. Abacca pineapples, of larger size, sell for fifty cents each, and Victoria, the extremely large long fruit, often called Porto Rico, bring $1.00 each. Among the most costly offerings are hothouse grapes, which sell for $2.50 a pound. These are seen in unusual variety, including Black Hamburg, the White Muscat of Alexandria, the amber-colored, musky-flavored Muscat of Hamburg, and Dacon Supert with berries round and of clear pale green, unless fully ripe, when they have a yellowish tint. A novelty for dinners and luncheons, designed by one of the uptown fruiterers, is hothouse peaches, each fruit set in a little nest with a dainty paper lining, and marked with the name of the guest in blue and gold.